1997

Nebraska Summary: S252 New Holland 8360

Nebraska Tractor Test Laboratory
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SUMMARY OF OECD TEST 1718—NEBRASKA SUMMARY 252
NEW HOLLAND 8360 DUAL POWER DIESEL
23 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1038 rpm)					
121.2 *(90.4)*	2201	7.51 *(28.44)*	0.434 *(0.264)*	16.14 *(3.18)*	
Standard Power Take-off Speed (1000 rpm)					
122.7 *(91.5)*	2121	7.41 *(28.05)*	0.423 *(0.257)*	16.55 *(3.26)*	
Maximum Power (2 hours)					
123.9 *(92.4)*	2000	7.15 *(27.05)*	0.404 *(0.246)*	17.34 *(3.42)*	
VARYING POWER AND FUEL CONSUMPTION					
121.2 *(90.4)*	2201	7.51 *(28.44)*	0.434 *(0.264)*	16.14 *(3.18)*	Air temperature
107.9 *(80.5)*	2305	7.23 *(27.37)*	0.469 *(0.285)*	14.92 *(2.94)*	80°F *(27°C)*
81.5 *(60.8)*	2323	5.98 *(22.64)*	0.515 *(0.313)*	13.62 *(2.68)*	Relative humidity
54.8 *(40.8)*	2344	4.78 *(18.09)*	0.611 *(0.372)*	11.46 *(2.26)*	31%
27.6 *(20.6)*	2359	3.61 *(13.66)*	0.913 *(0.556)*	7.66 *(1.51)*	Barometer
– –	2388	2.38 *(9.02)*	– –	– –	29.2"Hg *(99.0 kPa)*

Maximum Torque 417 lb.-ft. *(565 Nm)* at 1352 rpm
Maximum Torque Rise 44.2%
Torque rise at 1800 rpm 22%

DRAWBAR PERFORMANCE
(Unballasted–Front Drive Engaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F (°C) cool-ing med	Temp.°F (°C) Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—14th (1LC) Gear									
103.7 *(77.3)*	6755 *(30.0)*	5.75 *(9.26)*	2198	4.3	0.517 *(0.315)*	13.53 *(2.67)*	185 *(85)*	50 *(10)*	30.3 *(102.7)*
75% of Pull at Maximum Power—14th (1LC) Gear									
82.6 *(61.6)*	5065 *(22.5)*	6.12 *(9.85)*	2314	3.3	0.577 *(0.351)*	12.13 *(2.39)*	183 *(84)*	54 *(12)*	30.3 *(102.7)*
50% of Pull at Maximum Power—14th (1LC) Gear									
56.0 *(41.8)*	3370 *(15.0)*	6.23 *(10.03)*	2332	2.3	0.690 *(0.420)*	10.15 *(2.00)*	183 *(84)*	54 *(12)*	30.3 *(102.7)*
75% of Pull at Reduced Engine Speed—16th (1HC) Gear									
82.6 *(61.6)*	5070 *(22.5)*	6.11 *(9.84)*	1920	3.3	0.492 *(0.299)*	14.23 *(2.80)*	181 *(83)*	59 *(15)*	30.3 *(102.6)*
50% of Pull at Reduced Engine Speed—16th (1HC) Gear									
56.1 *(41.8)*	3380 *(15.0)*	6.22 *(10.01)*	1932	2.4	0.579 *(0.352)*	12.09 *(2.38)*	181 *(83)*	59 *(15)*	30.3 *(102.6)*

Location of Test: Silsoe Research Institute, Wrest Park, Silsoe, Bedford, United Kingdom MK45 4HS

Dates of Test: January-April 1997

Manufacturer: New Holland UK Ltd., Basildon, Essex, United Kingdom

FUEL and OIL: Fuel No. 2 Diesel **Cetane No.** NA **Specific gravity converted to 60°/60° F *(15°/15°C)*** 0.8407 **Fuel weight** 7.00 lbs/gal *(0.839 kg/l)* **Oil SAE** 10W-30 **API service classification** CF-4 **Oil consumption for 10 hours** NA **Transmission and hydraulic lubricant** SAE 10W-30 **Front axle lubricant** SAE 10W-30

ENGINE: Make New Holland Diesel **Type** six cylinder vertical with turbocharger **Serial No.** WL473076 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.40" × 5.00" *(111.8 mm × 127.0 mm)* **Compression ratio** 17.5 to 1 **Displacement** 456 cu in *(7480 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic fluid **Fuel filter** two paper elements and water separator **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** BX00002 **Tread width** rear 64.2" *(1630 mm)* to 87.9" *(2232 mm)* front 64.6" *(1642 mm)* to 93.9" *(2359 mm)* **Wheelbase** 107.2" *(2723 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Nominal travel speeds mph *(km/h)*** first 0.85 *(1.37)* second 1.03 *(1.65)* third 1.22 *(1.97)* fourth 1.47 *(2.37)* fifth 1.76 *(2.84)* sixth 2.12 *(3.41)* seventh 2.44 *(3.93)* eighth 2.52 *(4.06)* ninth 2.94 *(4.73)* tenth 3.04 *(4.89)* eleventh 3.52 *(5.66)* twelfth 4.24 *(6.82)* thirteenth 5.06 *(8.15)* fourteenth 5.97 *(9.60)* fifteenth 6.10 *(9.81)* sixteenth 7.18 *(11.56)* seventeenth 7.26 *(11.68)* eighteenth 8.61 *(13.85)* ninteenth 8.74 *(14.06)* twentieth 10.36 *(16.68)* twenty-first 12.38 *(19.92)* twenty-second 14.91 *(24.00)* twenty-third 17.74 *(28.55)* reverse 0.83 *(1.34)*, 1.20 *(1.93)* 1.72 *(2.77)*, 2.39 *(3.84)*, 2.47 *(3.97)*, 3.44 *(5.53)*, 4.95 *(7.96)*, 5.83 *(9.38)*, 7.09 *(11.41)*, 8.41 *(13.53)*, 12.10 *(19.47)*, 17.34 *(27.90)* **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** single wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1971 engine rpm and 1000 rpm at 2121 engine rpm **Unladen tractor mass** 11850 lb *(5375 kg)*

DRAWBAR PERFORMANCE

(Unballasted–Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F (°C) cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				7th (1LB) Gear					
65.7 *(49.0)*	11310 *(50.3)*	2.18 *(3.51)*	2309	15.6	0.670 *(0.407)*	10.46 *(2.06)*	185 *(85)*	63 *(17)*	30.3 *(102.6)*
				8th (4LA) Gear					
68.9 *(51.4)*	11040 *(49.1)*	2.34 *(3.77)*	2312	12.5	0.636 *(0.387)*	11.01 *(2.17)*	187 *(86)*	59 *(15)*	30.3 *(102.6)*
				9th (1HB) Gear					
81.0 *(60.4)*	11025 *(49.0)*	2.76 *(4.43)*	2304	11.2	0.576 *(0.350)*	12.15 *(2.39)*	185 *(85)*	57 *(14)*	30.3 *(102.6)*
				10th (4HA) Gear					
82.2 *(61.3)*	10960 *(48.8)*	2.81 *(4.53)*	2298	12.2	0.610 *(0.371)*	11.47 *(2.26)*	185 *(85)*	57 *(14)*	30.3 *(102.6)*
				11th (2LB) Gear					
93.9 *(70.0)*	10735 *(47.8)*	3.28 *(5.28)*	2267	10.3	0.561 *(0.341)*	12.49 *(2.46)*	185 *(85)*	57 *(14)*	30.3 *(102.6)*
				12th (2HB) Gear					
102.3 *(76.3)*	9990 *(44.4)*	3.84 *(6.18)*	2143	7.7	0.510 *(0.310)*	13.75 *(2.71)*	185 *(85)*	55 *(13)*	30.3 *(102.6)*
				13th (3LB) Gear					
105.8 *(78.9)*	9115 *(40.5)*	4.35 *(7.00)*	2003	6.3	0.483 *(0.294)*	14.49 *(2.86)*	183 *(84)*	55 *(13)*	30.3 *(102.7)*
				14th (1LC) Gear					
109.3 *(81.5)*	7890 *(35.1)*	5.19 *(8.36)*	2004	5.2	0.469 *(0.285)*	14.92 *(2.94)*	183 *(84)*	54 *(12)*	30.3 *(102.7)*
				15th (3HB) Gear					
103.8 *(77.4)*	7300 *(32.5)*	5.33 *(8.58)*	2001	4.7	0.493 *(0.300)*	14.20 *(2.80)*	183 *(84)*	50 *(10)*	30.3 *(102.7)*
				16th (1HC) Gear					
105.7 *(78.8)*	6270 *(27.9)*	6.32 *(10.17)*	1998	4.0	0.481 *(0.293)*	14.56 *(2.87)*	183 *(84)*	52 *(11)*	30.3 *(102.7)*
				17th (4LB) Gear					
105.0 *(78.3)*	6165 *(27.4)*	6.39 *(10.28)*	2000	3.9	0.486 *(0.295)*	14.42 *(2.84)*	183 *(84)*	50 *(10)*	30.3 *(102.7)*
				18th (2LC) Gear					
106.3 *(79.3)*	5220 *(23.2)*	7.64 *(12.29)*	2004	3.3	0.477 *(0.290)*	14.67 *(2.89)*	183 *(84)*	52 *(11)*	30.3 *(102.7)*
				19th (4HB) Gear					
103.8 *(77.4)*	5025 *(22.3)*	7.75 *(12.47)*	1997	3.2	0.493 *(0.300)*	14.19 *(2.79)*	181 *(83)*	56 *(12)*	30.3 *(102.7)*

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Engaged dB(A)
Maximum Sound Level	75.0	75.0
Bystander in 23rd(4LC)Gear	83.0	–

TIRES AND WEIGHT

	Tested Without Ballast
Rear Tires—No., size, ply & psi *(kPa)*	Two 18.4R38; **; 15 *(103)*
Front Tires—No., size, ply & psi *(kPa)*	Two 14.9R28; **; 17 *(117)*
Height of Drawbar	18.1 in *(460 mm)*
Static Weight with operator—Rear	7180 lb *(3256 kg)*
—Front	4835 lb *(2194 kg)*
—Total	12015 lb *(5450 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance figures on this summary were taken from a test conducted under the OECD Code II restricted standard test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1718**, Nebraska Summary 252, June 12, 1998.

LEONARD L. BASHFORD
Director

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R.D. GRISSO
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
(Unballasted—Front Drive Disengaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F (°C) cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—18th (2LC) Gear									
103.3 *(77.0)*	4715 *(21.0)*	8.21 *(13.21)*	2200	4.8	0.519 *(0.315)*	13.50 *(2.66)*	185 *(85)*	55 *(13)*	30.2 *(102.2)*
75% of Pull at Maximum Power—18th (2LC) Gear									
82.4 *(61.5)*	3540 *(15.7)*	8.73 *(14.05)*	2312	3.7	0.580 *(0.353)*	12.08 *(2.38)*	185 *(85)*	55 *(13)*	30.2 *(102.2)*
50% of Pull at Maximum Power—18th (2LC) Gear									
55.9 *(41.7)*	2360 *(10.5)*	8.88 *(14.29)*	2327	2.6	0.683 *(0.416)*	10.24 *(2.02)*	183 *(84)*	55 *(13)*	30.2 *(102.2)*
75% of Pull at Reduced Engine Speed—20th (2HC) Gear									
82.3 *(61.4)*	3540 *(15.7)*	8.72 *(14.03)*	1918	3.8	0.491 *(0.299)*	14.26 *(2.81)*	183 *(84)*	64 *(18)*	30.2 *(102.2)*
50% of Pull at Reduced Engine Speed—20th (2HC) Gear									
55.8 *(41.6)*	2355 *(10.5)*	8.89 *(14.30)*	1933	2.7	0.563 *(0.342)*	12.44 *(2.45)*	180 *(82)*	66 *(19)*	30.2 *(102.2)*
MAXIMUM POWER IN SELECTED GEARS									
11th (2LB) Gear									
67.2 *(50.1)*	8055 *(35.8)*	3.13 *(5.03)*	2307	15.3	0.664 *(0.404)*	10.55 *(2.08)*	183 *(84)*	64 *(18)*	30.2 *(102.3)*
12th (2HB) Gear									
81.0 *(60.4)*	7700 *(34.3)*	3.94 *(6.35)*	2301	11.2	0.610 *(0.371)*	11.47 *(2.26)*	181 *(83)*	64 *(18)*	30.2 *(102.3)*
13th (3LB) Gear									
94.7 *(70.6)*	7690 *(34.2)*	4.62 *(7.43)*	2240	10.6	0.563 *(0.343)*	12.43 *(2.45)*	183 *(84)*	64 *(18)*	30.2 *(102.2)*
14th (1LC) Gear									
103.8 *(77.4)*	7440 *(33.1)*	5.23 *(8.42)*	2115	8.9	0.511 *(0.311)*	13.71 *(2.70)*	185 *(85)*	50 *(10)*	30.2 *(102.2)*
15th (3HB) Gear									
101.6 *(75.8)*	7535 *(33.5)*	5.06 *(8.14)*	2000	9.0	0.504 *(0.307)*	13.89 *(2.74)*	183 *(84)*	50 *(10)*	30.2 *(102.2)*
16th (1HC) Gear									
104.1 *(77.6)*	6385 *(28.4)*	6.11 *(9.84)*	2004	6.8	0.493 *(0.300)*	14.21 *(2.80)*	183 *(84)*	54 *(12)*	30.2 *(102.2)*
17th (4LB) Gear									
103.8 *(77.4)*	6295 *(28.0)*	6.18 *(9.95)*	2005	6.8	0.491 *(0.299)*	14.26 *(2.81)*	183 *(84)*	54 *(12)*	30.2 *(102.2)*
18th (2LC) Gear									
105.4 *(78.6)*	5330 *(23.7)*	7.42 *(11.94)*	2002	5.4	0.482 *(0.293)*	14.52 *(2.86)*	183 *(84)*	54 *(12)*	30.2 *(102.2)*
19th (4HB) Gear									
102.9 *(76.7)*	5085 *(22.6)*	7.59 *(12.21)*	2009	5.2	0.496 *(0.302)*	14.11 *(2.78)*	185 *(85)*	55 *(13)*	30.2 *(102.2)*
20th (2HC) Gear									
103.0 *(76.8)*	4285 *(19.1)*	9.02 *(14.52)*	1998	4.4	0.493 *(0.300)*	14.21 *(2.80)*	183 *(84)*	55 *(13)*	30.2 *(102.2)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II		
Quick Attach: None		
Maximum Force Exerted Through Whole Range:	5015 lbs	*(22.3 kN)*
i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2900 psi	*(200 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	26.0 GPM	*(98.4 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	24.2 GPM	*(91.6 l/min)*
Delivery pressure:	2465 psi	*(170 bar)*
Power:	34.8 HP	*(26.0 kW)*

THREE POINT HITCH PERFORMANCE (SAE Static Test)

Observed Maximum Pressure:	2715 psi	*(187 bar)*
Location:	Remote outlet	
Hydraulic oil temperature:	150 °F	*(65°C)*
Location:	pump inlet	
Category:	II	
Quick attach:	none	

SAE Test—System pressure 2440 psi *(168 Bar)*

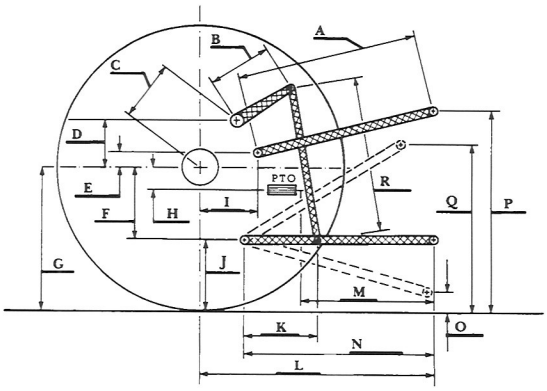
Hitch point distance to ground level in. *(mm)*	7.4 *(189)*	11.7 *(296)*	21.3 *(540)*	32.1 *(815)*	37.8 *(960)*
Lift force on frame lb	11412	11915	12320	12185	11375
" " " " *(kN)*	*(50.7)*	*(53.0)*	*(54.8)*	*(54.2)*	*(50.6)*

ASAE Test—System pressure 2715 psi *(187 Bar)*

Hitch point distance to ground level in. *(mm)*	7.4 *(189)*	11.7 *(296)*	21.3 *(540)*	32.1*(815)*	37.8 *(960)*
Lift force on frame lb	12679	13264	13713	13556	12657
" " " " *(kN)*	*(56.4)*	*(59.0)*	*(61.0)*	*(60.3)*	*(56.3)*

	inch	*mm*
A	29.7	*754*
B	9.1	*230*
C	15.6	*395*
D	14.3	*362*
E	8.2	*208*
F	9.8	*250*
G	32.3	*820*
H	0.7	*17*
I	17.9	*455*
J	22.5	*570*
K	17.1	*435*
L	47.0	*1194*
M	23.3	*592*
N	38.3	*974*
O	7.6	*193*
P	46.5	*1180*
Q	36.5	*928*
R	29.1	*740*

HITCH DIMENSIONS AS TESTED—NO LOAD



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